

PRIMARY USE: To prevent erosion and damage from sediment and runoff by stabilizing the soil surface with permanent vegetation.

ADDITIONAL USES: Use where a specific plant material cannot be established by seed or when immediate use is desired for aesthetics such as planting designs.

SODDING

What is it? To permanently stabilize areas by laying a continuous cover of grass sod.

Purpose

To prevent erosion and damage from sediment and runoff by stabilizing the soil surface with permanent vegetation where specific goals might be to provide immediate vegetative cover of critical areas, to stabilize disturbed areas with a suitable plant material that cannot be established by seed, to stabilize drainage ways, channels, and other areas of concentrated flow where flow velocities will not exceed those specified for a grass lining.



**Sodding
Perspective View**

Limitations

Increased installation costs over seeding, especially on large areas, and the necessity of irrigation in the early weeks. Sod also requires careful handling and is sensitive to transport and storage conditions.

Materials

Sodding and, for some areas, erosion netting and staples/pegs may be needed for stabilization.

Installation

Use in disturbed areas which require immediate and permanent vegetative cover, or where sodding is preferred to other means of grass establishment. Locations particularly suited to stabilization with sod include: waterways and channels carrying intermittent flow at acceptable velocities, areas around drop inlets when the drainage area has been stabilized, residential or commercial lawns and golf courses where prompt use and aesthetics are important, and steep critical areas.

Source: NRCS Planning and Design Manual, NRCS.

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Planning Considerations:

Quality turf can be established with either seed or sod; site preparation for the two methods is similar. The practice of sodding for soil stabilization eliminates both the seeding and mulching operations and is a much more reliable method of producing adequate cover and sediment control; however, compared to seed, sod is more difficult to obtain, transport, and store.

Advantages of properly installed sod include immediate erosion and dust control, nearly year-round establishment capability, less chance of failure than with seeding, initial freedom from weeds, and rapid stabilization of surfaces for traffic areas, channel linings, or critical areas.

Disadvantages include high installation costs, especially on large areas, and the necessity for irrigation in the early weeks. Sod also requires careful handling and is sensitive to transport and storage conditions. Soil preparation, installation, and proper maintenance are as important with sod as with seed.

Sod can be laid during times of the year when seeded grasses may fail, provided there is adequate water available for irrigation in the early weeks. Irrigation is essential at all times of the year to install sod. It is initially more costly to install sod than to plant seed; however, the higher cost may be justified for specific applications where sod performs better than seed.

In waterways and channels that carry concentrated flow, properly pegged sod is preferable to seed because it provides immediate protection. Drop inlets placed in areas to be grassed can be protected from sediment by placing permanent sod strips around the inlet. Sod also maintains the necessary grade around the inlet.

Because sod is composed of living plants that must receive adequate care, final grading and soil preparation should be completed before sod is delivered. If left rolled or stacked, heat can build up inside the sod thus causing severe damage and loss of costly plant material.

Plans and Specifications:

Plans for installing sod should be in keeping with this standard and shall describe the requirements for applying the practice to achieve the intended purpose. Specifications for applying and installing sod should use or be in conformance with the following: (Any variation from these specifications should be approved by an engineer or landscape architect).

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Choosing appropriate types of sod:

The type of sod selected should be composed of plants adapted to both the site and the intended purpose. Species selection is primarily determined by region, availability, and intended use. Availability varies across the state and from year to year. New varieties are continually being developed and tested. A complete and current listing of sod recommendations can be obtained from suppliers or Cooperative Extension Service.

Quality of sod:

Use only high quality sod of known genetic origin that is free of noxious weeds, disease, and insect problems. It should appear healthy and vigorous and should conform to the following specifications:

- a. Sod should be machine cut at a uniform depth of 1/2-2 in (13-51 mm) - excluding shoot growth and thatch.
- b. Sod should not have been cut in excessively wet or dry weather.
- c. Sections of sod should be a standard size (as determined by the supplier), uniform, and untorn.
- d. Sections of sod should be strong enough to support their own weight and retain their size and shape when lifted by one end.
- e. Harvest, delivery, and installation of sod should take place within a period of 36 hours.

Soil preparation:

Test soil to determine the exact requirements for lime and fertilizer. Soil tests may be conducted by the state soil testing lab or a reputable commercial laboratory. Information on soil testing is available from the Cooperative Extension Service. Where sodding must be planted without soil tests, the following soil amendments may be sufficient:

- a. Pulverized agricultural limestone at a rate of 2 tons/ acre (4480 kg/ hectare).
- b. Fertilizer at a rate appropriate for region.

Equivalent nutrients may be applied with other fertilizer formulations. These amendments should be spread evenly over the area and incorporated into the top 4-8 in (102-203 mm) of soil by disking, harrowing, or other effective means. If topsoil is applied, follow specifications associated with best management practices.

Prior to laying sod, clear the soil surface of trash, debris, roots, branches, stones, and clods larger than 2 in (51 mm) in diameter. Fill or level low spots in order to avoid the accumulation of standing water. Rake or harrow the site to achieve a smooth and level final grade.

Complete soil preparation by rolling or cultipacking to firm the soil. Avoid using heavy equipment on the area, particularly when the soil is wet, as this may cause excessive compaction and make it difficult for the sod to take root.

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Sod installation:

A step-by-step procedure for installing sod is illustrated and described below.

- a. Moistening sod after it is unrolled helps maintain viability. Store it in the shade during installation.
- b. Rake the soil surface to break the crust just before laying sod. During the summer, lightly irrigate the soil immediately before laying the sod to cool the soil and reduce root burning and dieback.
- c. Do not sod on gravel or soils that have been treated recently with sterilants or herbicides.
- d. Lay the first row of sod in a straight line with subsequent rows placed parallel to and butting tightly against each other. Stagger strips in a brick-like pattern. Be sure that the sod is not stretched or overlapped and that all joints are butted tightly to prevent voids. Use a knife or sharp spade to trim and fit irregularly shaped areas.
- e. Install strips of sod with their longest dimension perpendicular to the slope. On slopes 3:1 or steeper, or wherever erosion may be a problem, secure sod with pegs or staples.
- f. As sodding of clearly defined areas is completed, roll sod to provide firm contact between roots and soil.
- g. After rolling, irrigate until the soil is wet 4 in (102 mm) below the sod.
- h. Keep sodded areas moist to a depth of 4 in (102 mm) until the grass takes root. This can be determined by gently tugging on the sod - resistance indicates that rooting has occurred.
- i. Mowing should not be attempted until the sod is firmly rooted, usually 2-3 weeks.

Maintenance:

1. After the first week, water as necessary to maintain adequate moisture in the root zone and prevent dormancy of the sod.
2. Do not remove more than one- third of the shoot in any mowing. Grass height should be maintained between 2-3 in (51-76 mm) unless otherwise specified.
3. After the first growing season, established sod might require fertilization, and lime.
4. Follow soil test recommendations when possible, or use the rates associated with the particular area. Fertilize only for greener color and to fill in where grass is damaged.

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Sod installation:



Lay sod in a staggered pattern with strips butted tightly against each other; a sharp mason's trowel can be used to tuck down the ends and trim pieces

**Proper Installation of Grass Sod
Plan View**



Butting - angled ends caused by automatic sod cutting must be match correctly

**Proper Installation of Grass Sod
Section View**



Roll sod immediately to achieve firm contact with soil



Water to depth of 4 in (102 mm) as soon as the sod is laid, and continue watering as needed



Mow when the sod is established (2-3 weeks); set the mower high ~ 2-3 in (102 -127 mm)

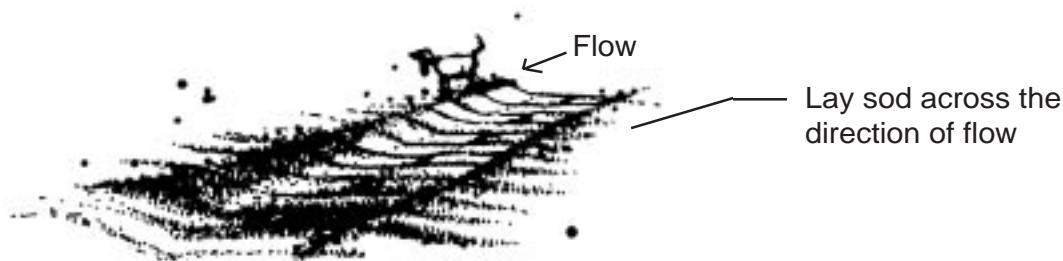
**Proper Installation of Grass Sod
Perspective View**

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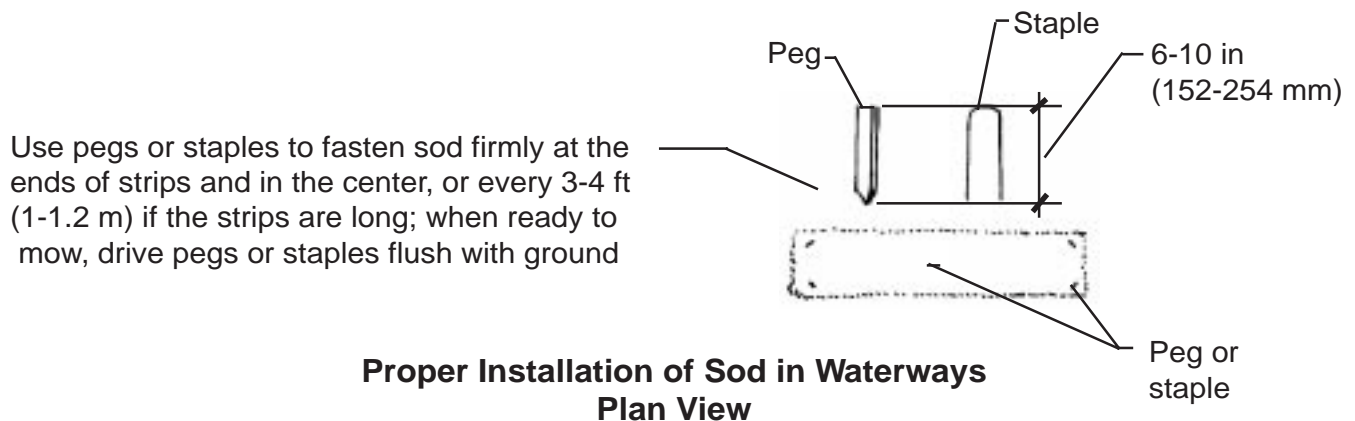
Sodded waterways:

Sod provides a resilient channel lining thus providing immediate protection from concentrated runoff and eliminating the need for installing mats or mulch. The following points apply to the use of sod in waterways:

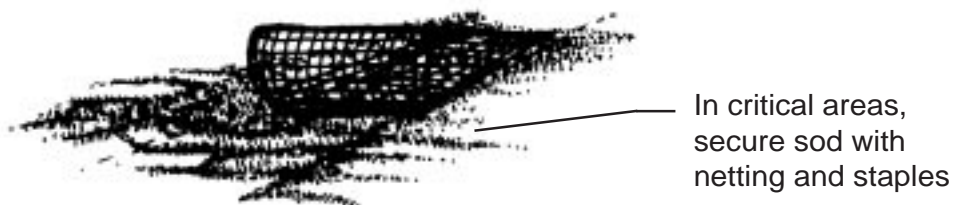
- Properly prepare the soil. The sod type must be able to withstand the velocity of flow specified in the channel design.
- Lay sod strips perpendicular to the direction of flow with the lateral joints staggered in a brick-like pattern. Edges should butt tightly together.
- After rolling or tamping to create a firm contact, peg or staple individual sod strips to resist washout during establishment. Jute or other netting material may be pegged over the sod for extra protection on critical areas.



**Proper Installation of Sod in Waterways
Perspective View**



**Proper Installation of Sod in Waterways
Plan View**



**Proper Installation of Sod in Waterways
Perspective View**